

In The Claims

Please enter the following amended claims:

1. (Currently Amended) An apparatus for automatically stuffing a tubular food casing with food product ~~[which comprises],~~ the apparatus comprising:

a stuffing horn through which food product flows into a tubular food casing deshirred from a shirred food casing stick on the stuffing horn, the stuffing horn including an input end ~~[of the stuffing horn being]~~ interconnected with a pressurized source of food ~~[product,]~~ product;

15 a clipping device for closing with a clip ~~[stuffed]~~ the food casing after being stuffed, the clipping device comprising a slot for guiding the clip and an entry into the slot; ~~[with a clip, a means for causing a tape,]~~ and

a tape holding lengths of string having end portions secured together to form string loops, ~~[to be]~~ the tape being directed toward the clipping device ~~[for closing an end of the food casing]~~ so that a string loop is transferred directly from the tape into ~~[an]~~ the entry into ~~[a]~~ the slot in the clipping device, wherein the entry is positioned in the slot and the tape is positioned relative to the entry so that when ~~[the end of]~~ the food casing is being closed with the clip, the clip draws the loop to the casing and holds the loop to the food casing between a major portion of the loop and the secured together end portions of the string.

2. (Currently Amended) The apparatus of claim 1 comprising ~~[wherein the means for causing the tape to be directed toward the clipping device comprises]~~ a plurality of rolls including a tape supply roll, a drive roll, a takeup roll and at least one intermediate roll which is proximate ~~[said]~~ the entry so that the secured together end portions of a string loop project from the tape into the entry into the slot as the tape passes around the intermediate roll.

3. (Currently Amended) The apparatus of claim 2 [~~wherein a means is provided~~] comprising means for driving the drive roll to pull the tape from the supply roll around the intermediate roll.

4. (Currently Amended) The apparatus of claim 3 [~~wherein~~] comprising an edge [~~is provided~~] for catching secured together end portions of a string loop as [~~it~~] the string loop passes around the intermediate roll to cause the secured together portions of the string to protrude from the tape into the entry to the slot and to assist in removal of the string loop from the tape.

5. (Currently Amended) The apparatus of claim [~~4 wherein~~] 1 comprising an air source [~~is provided~~] that directs the secured together end portions of the string loop into the entry to the slot.

6. The apparatus of claim 1 wherein the secured together portions are secured together by means of a knot.

7. (Currently Amended) The apparatus of claim 1 comprising a food product cut-off valve connecting the ~~[wherein an]~~ input end of the stuffing horn ~~[is interconnected]~~ with [a] the pressurized source of food product ~~[through a food product cut-off valve, said valve comprising], wherein the cut-off valve comprises:~~

a tapered valve seat having a ~~[frustroconical]~~ frustoconical tapered side wall ~~[and]~~ having opposing inlet and outlet openings ~~[in the side wall, said valve further comprising];~~ and

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a frustoconical ~~[plastic]~~ insert tapered to mate with and inserted into the tapered valve seat ~~[for insertion into the valve seat]~~, said ~~[plastic]~~ insert having a longitudinal axis and a hole passing through the insert ~~[perpendicularly to the longitudinal axis in a position]~~ positioned such that ~~[it]~~ the insert may be rotated to cause the hole to align with the opposing inlet and outlet openings of the tapered valve seat to permit food product to pass through the inlet opening in the valve seat, through the hole in the insert and through the outlet opening in the valve seat to the stuffing horn and such that the insert may also be rotated to cause the hole to become misaligned with the opposing inlet and outlet openings to impede the flow of food product to the stuffing horn.

8. (Currently Amended) The apparatus of claim 1 comprising means for radially compressing ~~[wherein means is provided to radially compress]~~ the ~~[stuffed]~~ food casing after being stuffed to cause a restricted location along a stuffed food casing length, said clipping device being configured to clip the casing at the restricted location.

9. The apparatus of claim 8 wherein a punch is provided for forcing a clip against a clip anvil to bend the clip around the restricted portion of the casing in the form of a helix.


10. The apparatus of claim 9 wherein two punch surfaces are provided to apply two spaced clips to the restricted location in the shape of mirror image helixes and a knife is provided to cut the casing between the applied clips.

11. Apparatus of claim 9 wherein a housing is provided having a channel for travel of the punch and an external punch slot is provided for easy access to the channel for easily replacing the punch.

12. Apparatus according to claim 10 wherein access to the knife is provided so that it can be easily replaced without disassembly of the clipping device.

13. The apparatus of claim 1 wherein the clipping device is of sufficiently light weight and is driven by a sufficient power source to obtain a clipping cycle time of less than 3 seconds.

14. (Currently Amended) The apparatus of claim 1 wherein a conveyor is provided to remove stuffed food product from the vicinity of the clipping device after a stuffed food casing is closed, said conveyor ~~[comprising]~~ comprising:

 a conveying belt defining a conveying surface having a variable length; and
one or more movable slacker idler rollers over which the conveying belt travels,
wherein the one or more slacker idler rollers are movable to, [said belt traveling over slacker
idler rollers beneath a conveying surface of the belt that] permit the length of the conveying
surface to be extended and retracted, wherein [to extend and reduce] a space between the
clipping device and the conveying surface may be enlarged and reduced by retracting and
extending the conveying surface length.

15. (Currently Amended) The apparatus of claim 14 comprising:
gatherers to gather a stuffed food casing to form a radial restriction in the stuffed food
casing; and

a conveyor drive cylinder [wherein means is provided] to cause the conveyor
conveying surface length to retract to increase the space when the gatherers [for the clipping
device] are operating [to gather stuffed food casing to form a radial restriction in the stuffed
food casing] and to cause the conveying surface length to extend to reduce the space and
place the conveying surface near the clipping device when the gatherers are dormant.

16. (Currently Amended) An apparatus for automatically stuffing tubular food casing with food product ~~[which comprises]~~, the apparatus comprising a stuffing horn through which food product flows into tubular food casing deshirred from a shirred food casing stick on the stuffing horn, the stuffing horn comprising an input end ~~[of the stuffing horn being interconnected]~~ connected with a pressurized source of food ~~[product,]~~ product; ~~[a clipping device for closing stuffed food casing with a clip, wherein the stuffing horn is interconnected with a pressurized source of food product through]~~ a food product cut-off valve connecting the input end with the food source, ~~[said]~~ cut-off valve comprising:

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a tapered valve seat having a ~~[frustroconical]~~ frustoconical tapered side wall ~~[and]~~ having opposing inlet and outlet openings in the side wall; ~~[wall, said valve further comprising]~~ and

a ~~[frustroconical]~~ frustoconical ~~[plastic]~~ insert tapered to mate with and inserted into the tapered valve seat ~~[for insertion into the valve seat]~~, said ~~[plastic]~~ insert having a longitudinal axis and a hole passing through the insert ~~[perpendicularly to the longitudinal axis in a position]~~ positioned such that ~~[it]~~ the insert may be rotated to cause the hole to align with the opposing inlet and outlet openings of the tapered valve seat to permit food product to pass through the inlet opening in the valve seat, through the hole in the insert and through the outlet opening in the valve seat to the stuffing horn and may also be rotated to cause the hole to become misaligned with the opposing inlet and outlet openings to impede the flow of food product to the stuffing horn.

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17. (Currently Amended) An apparatus for automatically stuffing tubular food casing with food product which comprises a stuffing horn through which food product flows into tubular food casing deshirred from a shirred food casing stick on the stuffing horn, an input end of the stuffing horn being interconnected with a pressurized source of food product, a clipping device for closing stuffed food casing with a clip, wherein means is provided to radially compress the stuffed food casing to cause a restricted location along a stuffed food casing length, said clipping device being configured to clip the casing at the restricted location and a punch comprising two punch surfaces and anvil are provided and configured so that the punch forces [~~a clip~~] two spaced apart clips against the [~~clip~~] anvil to bend the [~~clip~~] two clips around the restricted [~~portion~~] location of the casing in the form of [~~a helix~~] helixes.

18. (Currently Amended) The apparatus of claim 17 wherein two punch surfaces are [~~provided~~] configured to apply the two spaced apart clips to the restricted location in the shape of mirror image helixes, and wherein a cutting means is provided to cut the casing between the two [~~applied~~] clips.

19. Apparatus according to claim 17 wherein the cutting means is a knife and access to the knife is provided so that it can be easily replaced without disassembly of the clipping device.

20. Apparatus of claim 17 wherein a housing is provided having a channel for travel of the punch and an external punch slot is provided for easy access to the channel for easily replacing the punch.

21. (Currently Amended) An apparatus for automatically stuffing tubular food casing with food product ~~[which comprises]~~ the apparatus comprising:

a stuffing horn through which food product flows into a tubular food casing deshirred from a shirred food casing stick on the stuffing horn^[5];

~~[an input end of the stuffing horn being interconnected with a pressurized source of food product,]~~ a ~~[clipping]~~ device for closing ~~[stuffed]~~ the food casing after being stuffed ~~[with a clip], [wherein]~~ and a conveyor ~~[is provided]~~ to remove ~~[stuffed]~~ the food product casing from the vicinity of the ~~[clipping]~~ device after ~~[stuffed]~~ the food casing is stuffed and closed, wherein the ~~[said]~~ conveyor ~~[comprising]~~ comprises:

a conveying belt defining a conveying surface having a variable length;~~[said belt traveling over slacker idler rollers beneath a conveying surface of the belt that]~~ and

one or more movable slacker idler rollers over which the conveyor belt travels, wherein the one or more slacker idler rollers are movable to permit the length of the conveying surface to be extended and retracted, wherein ~~[to extend and reduce]~~ a space between the ~~[clipping]~~ device for closing the food casing and the conveying surface may be enlarged and reduced by retracting and extending the conveying surface length.

22. (Cancelled)

23. An apparatus for automatically stuffing tubular food casing with food product which comprises a stuffing horn through which food product flows into tubular food casing deshirred from a shirred food casing stick on the stuffing horn, an input end of the stuffing horn being interconnected with a pressurized source of food product, a clipping device for closing stuffed food casing with a clip, wherein two punch surfaces are provided to apply two spaced clips to the restricted location in the shape of mirror image helixes and a cutting means is provided to cut the casing between the applied clips.

24. Apparatus according to claim 23 wherein the cutting means is a knife and access to the knife is provided so that it can be easily replaced without disassembly of the clipping device.

25. (Currently Amended) A method for automatically stuffing tubular food casing with food product [~~which comprises~~] comprising:

passing food product through a stuffing horn into a tubular food casing deshirred from a shirred food casing stick on the stuffing horn where an input end of the stuffing horn is interconnected with a pressurized source of food product[;];


after the food casing is stuffed,[;] closing [~~stuffed~~] the food casing with a clip using a clipping device[; ~~causing a tape, holding lengths of string having end portions secured together to form string loops, to be directed toward the clipping device for closing an end of the food casing;~~]

transferring a string loop directly from [~~the~~] a tape into an entry into a slot in the clipping device so that when [~~the end of~~] the food casing is closed with the clip, the clip draws the loop to the casing and holds the loop to the food casing between a major portion of the loop and the secured together end portions of the string.

26. (Cancelled)

27. (Cancelled)

28. (Currently Amended) The method of claim [27] 25 comprising causing secured together end portions of a string loop as it passes around an edge to protrude from the tape into the entry to the channel and to assist in removal of the string loop from the tape.



29. (Currently Amended) The method of claim [28] 25 comprising directing the secured together end portions of the string loop into the entry to the channel using an air source; and capturing both end portions of the string between the clip end and the casing.

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

34. (Cancelled)

35. (Cancelled)

36. (Cancelled)

37. (Currently Amended) A method for automatically stuffing tubular food casing with food product which comprises causing food product to flow through a stuffing horn into tubular food casing deshirred from a shirred food casing stick on the stuffing horn, an input end of the stuffing horn being interconnected with a pressurized source of food product, closing stuffed food casing with a clip using a clipping device, wherein the stuffing horn is interconnected with a pressurized source of food product through a food product cut-off valve, said valve comprising a tapered valve seat having a [~~frustroconical~~] frustoconical tapered side wall and having opposing inlet and outlet openings in the side wall, said valve further comprising a [~~frustroconical~~] frustoconical plastic insert tapered to mate with the tapered valve seat for insertion into the valve seat, said plastic insert having a longitudinal axis and a hole passing through the insert perpendicularly to the longitudinal axis, rotating the insert to a position to cause the hole to align with the opposing inlet and outlet openings to permit food product to pass through the inlet opening in the valve seat, through the hole in the insert and through the outlet opening in the valve seat to the stuffing horn and rotating the insert to cause the hole to become misaligned with the inlet and outlet openings to impede the flow of food product to the stuffing horn.

38. (Cancelled)

39. (Cancelled)

AB (One) 40. (Currently Amended) A method for automatically stuffing tubular food casing with food product which comprises causing food product to flow through a stuffing horn into tubular food casing deshirred from a shirred food casing stick on the stuffing horn, an input end of the stuffing horn being interconnected with a pressurized source of food product, closing stuffed food casing with a clip using a clipping device, removing the stuffed food product from the vicinity of the clipping device after stuffed food casing is closed using a conveyor, and extending and retracting the conveyor by means of a structure comprising a conveying belt, said belt traveling over slacker idler rollers beneath a conveying surface of the belt that permit the length of the conveying surface to be extended and retracted to extend and reduce a space between the clipping device and the conveying surface.

[easing between the applied clips.]

41. (New) An apparatus for automatically stuffing a tubular food casing with food product, the apparatus comprising:

a stuffing horn through which food product flows into a tubular food casing deshirred from a shirred food casing stick on the stuffing horn;

a clipping device for closing with a clip the food casing after being stuffed, the clipping device comprising a slot for guiding the clip toward the food casing;

a loop for hanging the food casing after the food is stuffed; and

an air source positioned to direct the loop into the slot such that as the clip is directed toward the food casing, the clip draws the loop to the food casing and holds the loop to the food casing.